

## Claims

1. A method of implementing smooth capacity expansion for data communication products, architecture of the products includes at least circuit card, switched network card and back plane, wherein it is characterized that the method comprises:

set up a special framework for switched network card, switched network card, which is set in the framework, creates interconnection with interface card of switched network through the interface with circuit card on it and back plane;

set up multiple frameworks for circuit card, circuit card, which is set in the framework, creates interconnection with interface transfer card through the interface with switched network on it and back plane, and each circuit card corresponds one interface transfer card;

interface transfer card and interface card of switched network correspond with each other one by one, and are interconnected with optical fiber;

when increasing capacity, numbers of switched network cards and numbers of frameworks of the circuit card increase smoothly to implement smooth capacity expansion.

2. The method of claim 1, wherein it is characterized that:

the said interface card of switched network is designed as miniature structure, multiple miniature interface cards of switched network are inserted on a passive base card, and each of the miniature interface cards of switched network can be inserted or removed independently, it connects with switched network card through the passive base card and back plane.

3. The method of claim 1, wherein it is characterized that:

the said interface transfer card is designed as miniature structure, multiple miniature interface transfer cards are inserted on a passive base card, and each of the miniature interface transfer cards can be inserted or removed independently, it connects with circuit card through the passive base card and back plane.

4. The method of claim 1, wherein it is characterized that:

the said interface card of switched network is designed as miniature structure, multiple miniature interface cards of switched network are inserted on a passive base card, and each of the miniature interface cards of switched network can be inserted or removed

independently, it connects with switched network card through the passive base card and back plane;

at the same time, the said interface transfer card is designed as miniature structure, multiple miniature interface transfer cards are inserted on a passive base card, and each of the miniature interface transfer cards can be inserted or removed independently, it connects with circuit card through the passive base card and back plane.

5. The method of claim 4, wherein it is characterized that:

the said switched network card equips with backup card, when the main card stops working, the backup card will replace the main card to assure system works continuously.

6. According to the claim 5 the said method, wherein it is characterized that:

the said circuit card equips with backup card, when the main card stops working, the backup card will replace the main card to assure system works continuously.

7. A smooth capacity expandable system of data communication, its architecture comprises at least circuit card and switched network card, wherein it is characterized that:

the said data communication system further comprises interface card of switched network and interface transfer card, the said circuit card connects with switched network card through interface transfer card and interface card of switched network.

8. The system of claim 7, wherein it is characterized that:

the architecture of the said data communication system further comprises back plane, Switched network card connects with interface card of switched network through interface of circuit card on it and back plane, circuit card connects with interface transfer card through interface of switched network on it and back plane.

9. The system of claim 8, wherein it is characterized that:

it is further set up a special framework for switched network card; inside the framework, it is at least set up the said switched network card and interface card of switched network, switched network card connects with interface card of switched network through interface of circuit card on it and back plane;

it is further set up multiple frameworks for circuit card; inside the frameworks, it is set up the said circuit card and interface transfer card; circuit card connects with interface transfer card through interface of switched network on it and back plane, Each circuit card corresponds with an interface transfer card;

each interface transfer card corresponds with interface card of switched network one by one, their connections are set up by optical fiber.

10. The system of claim 9, wherein it is characterized that:

when capacity of the system is expanded, it keeps original switched network cards, circuit cards and back planes unchanged, smooth capacity expansion is implemented by increasing smoothly switched network cards and numbers of circuit card frameworks.

11. The system of claim 8, wherein it is characterized that:

the said data communication system also further comprises passive base card, the interface card of switched network is miniature structure, and multiple interface miniature cards of switched network are inserted on a passive base card, each of the miniature cards can be inserted and removed independently, they connect with switched network cards through the passive base card and back plane.

12. The system of claim 11, wherein it is characterized that:

when capacity of the system is expanded, it keeps original switched network cards, circuit cards and back planes unchanged, smooth capacity expansion is implemented by increasing smoothly switched network cards and numbers of circuit card frameworks.

13. The system of claim 8, wherein it is characterized that:

the said data communication system also further comprises passive base card, the interface transfer card is miniature structure, and multiple interface transfer miniature cards are inserted on a passive base card, each of the interface transfer miniature cards can be inserted and removed independently, they connect with circuit cards through the passive base card and back plane.

14. The system of claim 13, wherein it is characterized that:

when capacity of the system is expanded, it keeps original switched network cards, circuit cards and back planes unchanged, smooth capacity expansion is implemented by increasing smoothly switched network cards and numbers of circuit card frameworks.

15. The system of claim 8, wherein it is characterized that:

the said data communication system also further comprises passive base card;

the said interface card of switched network is miniature structure, and multiple interface miniature cards of switched network are inserted on a passive base card, each of the interface miniature cards of switched network can be inserted and removed

independently, they connect with switched network cards through the passive base card and back plane;

the said interface transfer card is miniature structure, multiple interface transfer miniature cards are inserted on a passive base card, each of the interface transfer miniature cards can be inserted and removed independently, they connect with circuit cards through the passive base card and back plane.

16. The system of claim 15, wherein it is characterized that:

when capacity of the system is expanded, it keeps original switched network cards, circuit cards and back planes unchanged, smooth capacity expansion is implemented by increasing smoothly switched network cards and numbers of circuit card frameworks.

17. The system of claim 16, wherein it is characterized that:

the said switched network card equips with backup card, when the main card stops working, the backup card will replace the main card to assure system works continuously.

18. The system of claim 17, wherein it is characterized that:

the said circuit card equips with backup card, when the main card stops working, the backup card will replace the main card to assure system works continuously.

19. The system of claim 9, wherein it is characterized that:

the said interface of circuit card, which is on the switched network card, and the said interface of switched network, which is on the circuit card, uses the same interface standard, multiple pair of the interfaces uses the same speed.